tration of young domestic animals, more especially lambs this inventor has devised an instrument with curved spring jaws connected with shear-like blades, the jaws meeting only after the blades have made their complete cu

DESIGN FOR A BELT POCKET.-Richard S. Porro, New York City. This design has a shield-tike portion near the top of which is a spring tongue, while below it is a circular figure on the front of the shield.

NOTE.-Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention and date of this paper.

The New York Observer, the first religious newspaper established in New York City, and for nearly three-quarters of a century a recognized exponent of the best thought of the Presbyterian Church, comes to us this week in new form, and, instead of being a huge blanket sheet, its pages are of the small quarto form now becoming more popular, and so much more convenient for reading and reference. The paper was established by Sidney E. and Richard C. Morse, in 1823, and in 1840 Rev. S. Irengus Prime became its editor. with whom was afterward associated his brother Rev. E. D. G. Prime. The present editors are a son and son-in-law of S. Irenæus Prime-Wendell Prime and Charles A. Stoddard. The Observer has always had in its service writers whose attainments were of the highest order in all religious and theological fields, and one of the mem bers of its business department, Mr. T. H. Cuthell, has been with the paper more than half a century. The change of form will cause no change in the purpose and spirit of the paper

# SCIENTIFIC AMERICAN BUILDING EDITION

### OCTOBER, 1894.-(No. 108.)

#### TABLE OF CONTENTS.

- 1. Elegant plate in colors showing a Colonial residence at Plainfield, N. J., recently erected for B. A. Hegeman, Jr. Two perspective elevations and floor plans, also an interior view. Cost \$6,000. A pic turesque design. Mr. Frank W. Beall, architect, New York City.
- Plate in colors showing a very attractive stone dwell-ing recently erected for H. J. Peet, Esq., at Buena Park, Ill. Two perspective elevations and floor plans. A pleasing design. Mr. J. L. Silsby, archiect, Chicago, Ill.
- 8. A dwelling at Bridgeport, Conn., recently erected for Frank Fowler, Esq, Two perspective elevations and floor plans. Cost complete \$5,600. Mr. A. H. Beers, architect, Bridgeport, Conn.
- 4. A cottage at Stratford, Conn., recently completed for Robert Wheeler, Esq. Perspective elevation and floor plan. A unique design presenting pleas-ing elevations and a well arranged plan. Cost \$6,200 complete. Mr. Edgar Osborne, builder, Stratford, Conn.
- 5. The residence at Belle Haven, Conn., recently completed for J. E. Kent, Esq. An attractive design in the modern Colonial style. Two perspective elevations and floor plans. Cost \$6,850 complete. Messrs. Rossiter & Wright, architects, New York City
- 6. A Colonial double house recently completed at Bayonne City, N. J. Perspective elevation and floor plans. Cost \$4,800. Mr. Arthur C. Longyear, architect, New York City.
- 7. A dwelling at Bensonhurst, L. I., recently erected for John P. Jepson, Esq. An excellent example for a suburban home. Two perspective elevations and floor plans. Cost \$5,620 complete, ready for occupancy. Mr. William H. Mersereau, architect, New York City. 8. A dwelling at Flatbush, L. I., recently completed for
- Richard Ficken. Esq. A design in the Colonial style. Two perspective elevations and floor plans. Messrs. J. C. Cady & Co., architects, New York Citv.
- 9. A small Colonial cottage at Bayonne City, N. J. Perspective elevation and floor plan. Cost complete, \$2,800. Mr. Arthur C. Longyear, architect, New York City.
- 10. A residence at Pompton, N. J., built for Wm. F. Hall, Esq. Cost, \$7,500. A good example of an all-the-year-round residence.
- 11. The new Protestant Cathedral at Berlin, Germany, costing \$2,400,000. Designed by Prof. Julius Raschdoff.
- 12. Roman remains at Bath, England
- 13. The Temple of Neptune at Paestum
- 14. Miscellaneous Contents : Mahogany pavement .- Proportion in architecture.-The architect who never exceeded estimates.-Some difference between

# Business and Personal.

The charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Adver-tisements must be received at publication office as early as Thursday morning to appear in the following week's issue

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# HINTS TO CORRESPONDENTS.

HINTS TO CORRESPONDENTS.
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References to former articles or answers should give date of paper and page or number of question,
Inquiries. not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.
Buyers wishing to purchase any article not advertised in our columns will be turnished with addresses of houses manufacturing or carrying the same.
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Moks referred to promptly supplied on receipt of price.
Winerals sent for examination should be distinctly

(Minerals sent for examination should be distinctly marked or labeled.

(6271) A. E. E., Brunswick, Ga. writes : Inclosed find a sample of a substance which fell from thesky, and which I am told is called "balloon spider's web." Itfell in great abundance at four o'clock in the afternoon of September 20, 1892, at Gainsville, Fla., coming form a westerly direction after a series of light showers. I have shown the substance to a number of people in two or three of the Southern States, and while it excited considerable curiosity, no one was able to give me any information concerning it. I am told that the same thing has occurred in Russia and other parts of Europe. Will you kindly enlighten me on this subject or give me the technical name of the same, that I may inform myself 9 A. The substance received was a white silky fibrous material, very soft to the touch. Dr. L. O. Howard, Entomologist, Department of Agriculture, to whom were ferred the matter, says : The substance is, in all probability, spider silk. The falling of this silk in such abundance time, and samples were received at the department from

and perturbation of all the members of the solar system and the position and changes for many thousands of the starry host

(6273) E. A. T. asks: 1. What is the voltage of motor 641 wound for dynamo with No. 20 wire? A. We have no record of the factors, and do not recommend the motor as a dynamo. 2. Will small plating dynamo described in SUPPLEMENT, No. 720, give trouble by heating ? A. No. 3. Are toothed washer armatures better than plain washers? A. Each has its own good points; one cannot be pronounced better than the other.

Wimshurst influence electric machine and am much troubled with the plates breaking. They start in the middle and the crack extends until the plate comes in half. They are cemented on to wheels in the center of the plate. Can I stop it in any way, and if not is there woards. Just out. Morse Machine Co., Rochester, N. Y. any other cheap substance that I could use instead of glass. Would hard rubber do? The plates are ten minute. Allsizesin stock. Irvin Van Wie, Syracuse, N.Y. inches across. A. Possibly the crack is started in your plates by the heat used in cementing. They should not act as you describe. Ebonite will answer instead of glass. 2. Could you tell me of any paint that would do to cover the glass in making Leyden jars instead of tin Split Pulleys at Low prices, and of same stren thand appearance as Whole Pulleys. Yocom & Son's Shafting but would be very inferior if put on with varnish. 3. Could you light a small incandescent lamp, say 1, 2, or 3 (6275) A. M. F. writes: 1. If two in-

sulated points (copper or other metal) are 1/2 inch apart, will a current actuated by a potential of 10,000 volts jump across. A. No. 2. If two points, insulated, are inclosed in a vacuum, and connection is made by quicksilver flowing over the two points, what action will a 10,000 volt current have on the quicksilver? Or, in other words, can quicksilver, under these conditions, be used to com-For the original Bogardus Universal Eccentric Mill, plete circuit? A. There is no such thing as a 10,000 volt or any other volt current. Voltage is a measure of potential, not of current. Quicksilver will conduct a current very well, although it is of rather high resistance.

> (6276) N. M. B. asks: 1. In making armature for motor described in "Experimental Science," can I with advantage use a section of an iron pipe 21/4 inches internal diameter, 2 inches long, and iron \$6 inch thick, instead of wire armature ? A. No; it is inferior to wire. 2. Is there any convenient and reliable test for genuine amber ? A. Hardlyany can be given; its specific gravity 1.065 to 1.081, hardness 2 to 2%, and its resistance to heat, fusing imperfectly at 550° Fah., are criteria. 3. Does the SCIENTIFIC AMERICAN SUPPLEMENT treat subjects more in detail than the SCIENTIFIC AMERICAN? A. The articles in the SUPPLEMENT are longer as a rule. and hence perhaps go more into detail. The SCIENTIFIC AMERICAN SUPPLEMENT represents the scientific life of the world in all departments better than any other publication known to us, and is an invaluable companion to the SCIENTIFIC AMERICAN.

(6277) J. N. T. asks: 1. Will No. 19 American gauge iron wire do for core of armature? A. Yes. 2. You state in body of article that No. 18 American gauge magnet wire is to be used on armature and in summary No. 16. Which is correct? A, Use No. 18 wire for the armature colls. 3. In your diagram you show that coils on field magnet are wound in shape of a pyramid. Must it be wound with one convolution less C in each layer or must it be wound same as directions for C pyramid. Must it be wound with one convolution less armature ? A. Our diagram shows the preferable way of winding the magnets. The pyramidal winding is not ssential-it is convenient. 4. Can you tell me how to make a plunge battery to run the motor ? A. See our SUPPLEMENT, No. 792. 5. Will a gravity battery run it? A. Not unless of very large size. We do not recommend it. 6. I have inspected a number of stove pipes made of galvanized iron, and in a number of cases I have noticed a deposit has run down the outside that has a brownish yellow cast. Can you please inform me what it is? Is it yellow cast. Can you please inform me what it is ? Is it C creosote from the smoke? A. We think it is largely em- | C pyreumatical matter (creosote, etc.) C pyreumatical matter (creosote, etc.)

(6278) G. P. McD. asks: Is there any hard non-conducting material that will stand the heat of an electric arc without burning for about 2 minutes ? A. Lime, zirconia or magnesia approaches your requirements.

(6279) W. B. H.-False Scorpion on a House Fly .- The small brown A thropod, with flattened abdomen, and lengthened maxillary palpi, ending like a lobster's or scorpion's claws, and which fell from a house fly which Mr. W. B. Halsey, of Brooklyn, caught, is one in the vicinity of Gainsville, Fue, in the third week of of the false scorpions (Chelifer cancroides, L.) This September, 1892, attracted considerable attention at the species is often found on the legs of flies and of other insects, allowing itself thus to be transported and perhaps several residents of Gainsville and Arredondo. The mat-feeding upon the red mite, Astoma (Trombidium) muster was carefully investigated by Dr. George Marx, the carum, Riley, which is so frequently attached to the comwell known authority on spiders, who in a communication mon house fly. The Chelifer is not uncommon about read before the Entomological Society of Washington old books and in dark places, where it feeds on mites November 3, 1892, published in Volume II. of the Pro- and book lice (Psocus spp.) The female carries her eggs (6280) F. J. M. says: In what part of bivalves are pearls found ? I mean whether they are situated inside of the body of the pearl oyster, or outside between the body and the shell. A. It is believed that most pearls are formed by the intrusion of some foreign substance between the mantle of the mollusk and its shell, which, becoming a source of irritation, determines the deposition of nacreous matter in concentric layers until the substance is completely encysted.-Encyclopedia Britannica. (6281) W. D. S. asks: Is there any trouble experienced with fire hydrants from freezing? And if so, what is the cause? Is it from difficulty getting rid of the water in the hydrant after it is shut off from below? A. When fire hydrants are properly set with a cesspool and waste for draining the hydrant when closed, there should be no trouble from freezing. If the waste hole is not provided, or gets stopped, the hydrant will remain full of water, and will freeze solid in cold of this work have won for it the LARGEST CIRCULATION the position of celestial objects within their field. Ac- weather. In cold climates the value of a hydrant should

" Theory of the Cause of Solar and Planetary Rotations." By I. E. C. "The Eucalyptus." By J. F. J.

# TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all (6274) E. H. writes: 1. I have a small foreign countries may be had on application, and persons contemplating the securing of patents, either at homeor abroad, are invited to write to this office for prices which are low, in accordance with the times and our exhusines facilities for conducting the MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

# INDEX OF INVENTIONS

## For which Letters Patent of the United States were Granted

# October 16, 1894,

# AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Ac

Ba Ba

Acid, apparatus for making sulphuric, P. S. Gil-	
Current apparatus for maxing surplume, r. s. one Current apparatus for maxing surplume, r. s. one Current apparatus for distribution apparatus for distribu- al arm number doors, etc., J. F. Graybill. Anmonium bichromste making, E. A. Starke. Anbor press, J. H. Sheridan Asphaltum or bitumen disintegrator, F. Waiker.	527,680
Aging wines or distilled liquors, apparatus for, T.	161-010
R. Timby	27.564
Ammonium bichromate, making, E. A. Starke 5	27.563
Annealing box, W. H. White	27,642
Arbor press, J. H. Sheridan	527.731
Bag. See Mail bag.	
Bag fastener, A. Nixon	527,714
sen & Arkell	527.558
Arbor press, J. f. Suerushi Asphaftum or bitumen disintegrator, F. Walker. I Bag. See Mail Dag. Bag fastener. A. Nixon. Bag for containing granular material, Matthies- sen & Arkell. Battery. See Primary battery. Bearing, vehicle balk. E. L. Brown. Bearing, vehicle balk. E. L. Brown. Bejt igbtener, B. F. Radford. Bicycle Scogramuljo & Dominict. Bicycle attachment, L. A. Frankenberg. Bicycle brake, F. J. Cole. Bicycle brake, G. E. W bitner. Bicycle brake, G. B. Bicycle brake, B. Bicycle br	
Battery. See Frimary pattery. Bearing, shaft, S. H. Wheeler	527.641
Bearing, vehicle ball, E. L. Brown	527,65 <sup>0</sup>
Belt tightener, B. F. Radford	527.500 597.798
Bicycle attachment, L. A. Frankenberg	527.549
Bicycle brake, F. J. Cole	527,479
Bicycle driving mechanism, G. S. Webb	527.568
Bicycle handle, adjustable, E. C. Woodard	527,576
Bicycle lock, Free & Heath	527,418
block.	
Blue, soluble alizarin, H. N. F. Schaeffer	527,457 597 511
Boiler. See Locomotive boiler. Steam boiler.	141,011
Boiler, Tetlow & Horricon.	527,515
Boiler furnace, smokeless, M. McCarthy	527,651
Boiler, Felow & Ferracian Schemer, Steam Durer, Boiler, J. Vanes Boiler, J. Vanes Boiler Turnace, smokeless, M. McCarthy Boiler Schemer, Schemer, M. & H. W. Fox Book Devider Schemer, J. D. Biderkin Book boiler, J. Pendergast. Bottle corking apparatus, E. J. Boyd. Bottle corking apparatus, E. J. Boyd. Bottle stopper, C. De Witt Bottle stopper, C. De Witt Bottle stopper, Schnelder & Bromley Box See Annealing Box. Letter box. Box See Annealing Box. Letter box. Brake. See Bicycle brake. Car brake. Brush C. W. Roche Building thorks. A. Kederici.	527,417
Bolt. See Expansion bolt. Book holder open L. L. D. Elderign	597 594
Boot, wool or felt, J. Pendergast	527,717
Bottle, S. Howes	527,494
Bottle stopper, C. De Witt	527,672
Bottle stopper, Schneider & Bromley	527,726
Box. See Annealing Dox, Letter box.	527.574
Brake. See Bicycle brake. Car brake.	061,012
Brick kiln, N. Merley	527.703
Building construction, freproof, T. Bailey	527,649
Brush. C. W. Roche. Builditug construction, freproof, T. Balley Building hock, A. Federici. Burner. See Hydrocarbon burner. Stove gas burner.	527,416
burner. See Hydrocarbon burner. Stove gas	
Butter worker, R. B. Disbrow	527,673
Button, H. W. Libbey.	527,432 527,5 <b>0</b> 2
Button, separable, J. Holmes.	527,555
Butter worker, R. B. Disbrow. Button, H. W. Libbey. Button, F. Neidbacdt Button, separable. J. Holmes. Calendar, W. K. David. Calipers, J. Bath Candy scouring nd cleaning apparatus, G. Carl-	527,413 527,651
Candy soouring nd clopping apparetus () Carl	021,001
Candy scouring or cleaning machine, G. Carlson. Candy scouring or cleaning machine, G. Carlson. Cars, closing, J. Banbury Car brake, hydraulic, W. L. Fitzhugh Car brake, railway, H. Hinckley Car coupling, F. Schalcke Car scoure, H. B. Ogden Car safety apparatus, street, Andrews & Mott Car safety apparatus, street, G. B. St. John Car wheel lubricator, J. W. Beneau Carbuetor, E. M. Westcott	527.662 527,590
Candy scouring or cleaning machine, G. Carlson	527,650
Car brake, hydraulic, W. L. Fitzhugh	527,743
Car brake, railway, H. Hinckley	527,749
Car fender, H. B. Ogden	527,715
Car safety apparatus, street, Andrews & Mott	527,646
Car saudides vering mechanism, street, A. Parrant, Car signaling apparatus, street, G. B. St. John	527.461
Car wheel lubricator, J. W. Reneau	527.447
Carburelot, E. M. Westcott. Card, display, C. Hernsheim Card sipport, W. F. Jones. Card sipport, W. F. Jones. Cart sipport, W. F. Jones. Case. See Cigarette or match case. Ticket case. Centrifugal machine, E. Levy-Samson. Chair, See Panel chair.	527.639
Card support, W. F. Jones.	527,694
Cart ridge, funcigating, O.S. Erickson	527,484
Case. See Cigarette or match case. Ticket case. Centrifugal machine. E. Levy-Samson	527,499
Chair. See Panel chair.	
Chair. See Panel chair. Churn and butter worker, combined, D. W. Payne	597 716
Cigar band, C. Hernsbeim	527.687
Cigar or cigarette, Sarapata & Souvazoglu	527.724
Cigarette or match case, J. L. Sommer	527,625
Clamp. See Neckband clamp.	
Clock, electric, C. Gullberg.	
Cloth stretching machine . Milir	527.528
Clothes drier, W. H. Moseley	527,528 527,441 527,705
Clamp. See Neckbard clamp. Clock_sleetric, C. Gulberx Cloth stretching machine, J. Muir Clothes drier, W. H. Moseley Clothes drier, W. H. Moseley	527,528 527,441 527,705
Clothe stretching machine, J. Muir Clothes drier, W. H. Moseley Clothespin, G. W. McCoole Coab step, B. D. Druen Coal breaker, E. B. Coze.	527,528 527,441 527,705
Coach step, B. D. Druen	527,528 527,441 527,705 527,500 527,596 527,411 527,412
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen Coal breaker, E. B. Coxe. Coal breaking apparatus, E. B. Coxe Coat. N. Schloss.	527,528 527,441 527,705 527,500 527,596 527,411 527,412 527,561
Coach step, B. D. Druen	527,528 527,441 527,705 527,705 527,500 527,561 527,561 527,561 527,561 527,569 527,567 527,569 527,676 527,676 527,676 527,677 527,579 527,471 527,519 527,420 527,420

the English and American plumbers.-Decay of stone.-Wood water main.-Artificial marble.-Art mouldings, illustrated.-Snow guards for roofs, etc., illustrated.-Double tenoning by machinery.-Transparent bricks for hothouses .- The Capital heater, illustrated.-The Poppert patent improved weight sliding blinds, illustrated.-The new decoration in the apse of St. Paul's .- Preparing walls for papering.--An improved carpenter's clamp, illustrated .-- An improved sanitary appliance, illustrated .- Hughes' improved drawing table, illustrated .- Helping the deaf to hear, illustrated.

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The Fullness, Richness, Cheapness, and Convenience all newsdealers. MUNN & CO., PUBLISHERS, 361 Broadway, New York.

ceedings, pp. 385-9, gave it as his conclusion that the in a little bunch under the abdomen.-C. V. R. substance was composed of the matted together webs or threads of gossamerspiders, which sail through the air in such numbers in the sunny days of early autumn. Care, ful chemical and microscopical examinations confirmed this theory.

(6272) W. C. V., Iowa, writes: Is there an observatory in United States whose latitude and longitude is so accurately known, and whose clock has the time sufficiently correct, and whose telescope is mounted with such accuracy in all its circles and bearings, that the telescope can be set at an altitude and azimuth according to astronomical computations, so that the planet Jupiter will appear in the field at the tick of the clock ? Are therecomputations 200 years old or more, that are sufficiently correct to enable the performing of the above feat? A. Yes; every well regulated working observatory in the United States and other countries can set it transit for a computed entrance of a star or planet into the field. Many of the best equipped observatories can also set their equatorially mounted telescopes to cover

of any Architectural Publication in the world. Sold by curate observations have been made on the positions of be 5 feet below the surface, with a pit sufficiently large to celestial objects for the past 150 years, which with the quickly absorb the water wasted, and from leakage of present observation have well established the position the valve.

Cut-on and strainer attachment for rain water	
spouts, A. H. Barth 527,400	
spouts, A. H. Barth	
Cutter. See Gear cutter.	
Culler head for woodworking machines, E. G.	
Blaney, Jr	
Blaney, Jr	
Hess	
Hess	
Deck iron, F. D. Chase	
Dental tool, J. G. Hollingsworth	
Device for tradesmen's use, T. L. Bristol	
Door check or closer, E. I. B'mut	
Door closer, gravity, M. R. Hubbell	
Door lock sliding W E Johnson 527 609	
Door operating device juil cell C A Krutsch 527.752	
Door operating device, juit cell, C. A. Brutsch 527,752 Boor spring of check, H. W. Latsson	
Dough moulding and dividing machine Althans	
& Ruckstingt and arriting indennie, rendens	
& Ruckstinat	
Drawing rolls for fibrous material, metallic, W.	
Hinchliffe	
Dredge or other structures, meansfor supporting,	
E. 8. Bennett	
Drier. See Clothes drier.	
Drill. See Rock drill.	
Drilling machine, J. Sullivan, Jr	
Earring, C. Babcock	
Electric cable, T. J. Dewees	
Electric machine, dynamo, E. Fawcett	
Electrical conductors, weather protecting cover-	
Enectrical conductors, weather protecting cover-	
ing for. E. J. Houston	
Elevating apparatus, U. W. Hunt	
Elevator See Hay elevator. Elevator apparatus. W. Hill	
Elevator door operating device, E. U. Church 527,665	
Engine. See Gas engine.	
Engraving machine, E. Fanshaw	
Expansion bolt. I. Church 527,406	
Eyeglasses, H. E. Kirstein 527,611	